

CLAIMS

What is claimed is:

1. A light emitting diode package comprising:
  - 5 a ceramic cavity comprising an integrated substrate for mounting a light emitting diode wherein said ceramic cavity and said integrated substrate can be manufactured simultaneously and wherein said cavity is shaped to focus light in a predetermined direction; and
  - a metallic coating on a portion of said ceramic substrate for reflecting
  - 10 light in a predetermined direction.
2. The light emitting diode as recited in Claim 1 wherein said cavity is substantially a rectangular shaped cavity.
- 15 3. The light emitting diode as recited in Claim 1 wherein said cavity is substantially a trapezoidal shaped cavity.
4. The light emitting diode as recited in Claim 1 wherein said cavity is substantially an oval shaped cavity.
- 20 5. The light emitting diode as recited in Claim 1 wherein said cavity is substantially a circular shaped cavity.
6. The light emitting diode as recited in Claim 1 wherein said cavity is
- 25 coated with a luminescent material.

7. The light emitting diode as recited in Claim 6 wherein said luminescent material comprises phosphorus.

5 8. A method for manufacture of a light emitting diode package comprising:  
forming a ceramic cavity having a bottom and a top and comprising an  
integrated substrate for mounting a light emitting diode wherein said cavity is  
shaped to focus light in a predetermined direction;  
coating a portion of said ceramic cavity with a light reflective material;  
10 positioning a light emitting diode on said substrate; and  
depositing an optically transparent material in said cavity to protect said  
light emitting diode.

9. The method as recited in Claim 8 wherein said forming said ceramic  
15 cavity comprises forming a cavity that is substantially rectangular shaped.

10. The method as recited in Claim 8 wherein said forming said ceramic  
cavity comprises forming a cavity that is substantially trapezoidal shaped.

20 11. The method as recited in Claim 8 wherein said forming said ceramic  
cavity comprises forming a cavity that is substantially oval shaped.

12. The method as recited in Claim 8 wherein said forming said ceramic  
cavity comprises forming a cavity that is substantially circular shaped.

13. The method as recited in Claim 8 further comprising coating said cavity with a luminescent material.

5 14. The method as recited in Claim 13 wherein said luminescent material comprises phosphorus.

15. The method as recited in Claim 8 wherein said positioning said light emitting diode comprises determining a location between said bottom and  
10 said top of said cavity to locate said light emitting diode to achieve a predetermined viewing angle of said light emitting diode.

16. The method as recited in Claim 15 further comprising locating said light emitting diode closer to said bottom of said cavity to reduce said viewing  
15 angle of said light emitting diode.

17. The method as recited in Claim 15 further comprising locating said light emitting diode closer to said top of said cavity to increase said viewing angle of said light emitting diode.  
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18. The method as recited in Claim 8 wherein said depositing said optically transparent material in said cavity to protect said light emitting diode comprises forming a domed layer of said optically transparent material over said light emitting diode.

19. The method as recited in Claim 8 wherein said depositing said optically transparent material in said cavity to protect said light emitting diode comprises forming a concaved layer of said optically transparent material over
- 5 said light emitting diode.